THE INFLUENCE OF EXPERIENCED REGRET ON GOAL-RELATED INTENTIONS AND MOTIVATIONS

A Dissertation

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ABSTRACT

The purpose of the present investigation was to examine the impact of experienced regret on the formation of goal-relevant intentions and motivations. Based on functional emotion theories, which posit emotions are coordinated responses that resolve challenges to goals, experienced regret was expected to increase the formation of goal relevant intentions and motivations, even in domains unrelated to the source of regret. The present investigation also assessed one potential mechanism that might contribute to this relationship – narrowed focus of attention.

Study 1 examined the impact of experienced regret on attention and formation of goal-relevant intentions and motivations. Participants wrote narratives to elicit experienced regret, anticipated regret, or a neutral state. They then completed a global-local task to measure attention, and indicated intentions and motivations to pursue an important goal. Study 2 examined the impact of experienced regret on attention and formation of goal-relevant intentions and motivations in a same or different domain as the source of regret. Participants read scenarios to elicit experienced regret (over a social situation) or a neutral state. They then completed a global-local task to measure attention, and indicated intentions and motivations to pursue either an important social goal (same domain) or health goal (different domain). Study 3 examined the impact of experienced regret on goal pursuit over time, and in a real world domain. Participants wrote narratives to elicit experienced regret, and then indicated intentions and motivations to pursue their New Year's Resolution.

Overall, hypotheses were not supported in this investigation- experienced regret did not increase goal-relevant intentions or motivations in either a same or different domain. Although null findings cannot be clearly interpreted, the findings in the present investigation might suggest that experienced regret has no impact on goal pursuit, or that its impact is at least limited to decisions in a particular domain. Future investigations should address potential limitations, as well as assess goal pursuit under more controlled conditions

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INTRODUCTION

Regret is an unpleasant and frequently experienced emotion (Shimanoff, 1984). Because it is aversive, people are often motivated to find ways to avoid, or at least minimize regret, and will take action to avoid outcomes that they anticipate will result in regret (Zeelenberg & Pieters, 2007). But experiencing regret might actually have some benefits for people in their goal pursuits. Because goals are an important part of everyday life, understanding what factors determine success or failure is a fundamental concern in the social sciences (Gollwitzer & Sheeran, 2006). Functional theories of emotion posit that emotions, such as regret, are coordinated responses that help people resolve particular challenges to goals (e.g., Carver & Sheier, 1990; Lench, Flores, & Bench, 2011; Lench, Bench, Darbor, & Moore, 2015; Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). The present investigation applied a functional account to understanding the potential impact of experienced regret on goal pursuits. Based on a functional account of regret, experienced regret was expected to demonstrate benefits for goal pursuits, including the formation of goal-relevant intentions and motivation to pursue goals.

Experienced Regret and Goal Pursuit

Regret is a negative, cognitively based emotion that occurs when recognizing a current state would have been better with a different decision (Reb & Connolly, 2004; Zeelenberg, 1999). It is associated with thinking about upward counterfactuals (i.e., comparisons people make between their current state and a better real or imagined

alternative state; e.g., Roese, 1997). Regret is distinct from other negative emotions, including other negative emotions that can result from upward counterfactuals (e.g., disappointment, guilt, shame) in appraisals, experiential content, and behavioral consequences (Coricelli & Rustichini, 2010; van Dijk & Zeelenberg, 2002; Zeelenberg & Breugelmans, 2008; Zeelenberg & Pieters, 2007; Zeelenberg, van Dijk, Manstead, & Van der Plight, 1998). Because regret results from a decision that a person has made, it is associated with appraisals of personal responsibility and control over the situation (Gilovich & Medvec, 1994; Zeelenberg, 1999; Zeelenberg et al., 1998). In other words, regret is the negative feeling of self-reproach for not making a better decision.

Functional theories of emotion are a broad class of emotion theories that posit different discrete emotions are associated with changes in behavior, cognition, and physiology that promote adaptive responses to challenges to goals (Carver & Sheier, 1990; Ekman, 1992; Frijda, 1987; Lench et al., 2011; Lench et al., 2015; Levine, 1996; Mauss et al., 2005; Pinker, 1997; Roseman, Antoniou, & Jose, 1996). For example, anger is theorized to result when people encounter obstacles to their goals, such as a computer crashing while working on a paper. Multiple studies have demonstrated that anger is associated with changes across systems that are consistent with the function of facilitating and motivating people to overcome those obstacles, including increased attention to rewards (Ford et al., 2010) and physiological arousal (e.g., Averill, 1983; Carver & Harmon-Jones, 2009; Russell & Mehrabian, 1974). Functional theories have largely been applied to emotions that occur early in development, such as anger, and have seldom been utilized to make predictions about emotions that occur later in

development, such as experienced regret. Applying a functional account to the study of experienced regret has the potential to provide novel predictions for the impact of regret on goal pursuits.

Experienced regret occurs *after* a decision has been made and the outcomes are inferior to real or imagined alternatives (Zeelenberg & Pieters, 2007). For example, a person on a low-fat diet might experience regret after indulging in a juicy cheeseburger rather than eating a salad. Applying a functional account to this particular challenge to goals, I theorize that the function of experienced regret is to motivate people to learn from their past mistakes in order to improve future goal pursuits. Consequently, experienced regret should direct attention to the causes and consequences of past mistakes, thus encouraging people to think about how they could have made a better decision. This perspective is consistent with arguments within the regret literature that regret resulting in learning can be considered functional (Coricelli & Rustichini, 2010; Zeelenberg, 1999). It is also consistent with evidence that suggests regret can be informative about the status of current goals (Darbor, & Lench, 2013; Roese & Summerville, 2005; Zeelenberg, van Dijk, Manstead, & van der Plight, 2000). For example, people are more likely to experience regret when there are still opportunities for people to make better future decisions about the source of regret (Roese & Summerville, 2005), suggesting that regret experienced when learning from mistakes would be beneficial.

Unlike previous accounts that arise out of the regret literature, a functional account of regret would further suggest that experienced regret should result in changes

across systems that would facilitate and motivate subsequent goal pursuits, including goals that are *unrelated to the source of the experienced regret*. Other emotions, such as anger and sadness, have been demonstrated to have effects that persist beyond the eliciting situation (Lerner & Keltner, 2001; Small & Lerner, 2008). For example, participants who wrote about past experiences that made them angry experienced cognitions related to control and subsequently judged that they were less at risk for a host of outcomes (Lerner & Keltner, 2001). In another investigation, participants who wrote about past experiences that made them angry experienced a broadening of attention and subsequently made more stereotypic judgments about others (Bodenhausen, Sheppard, & Kramer, 1994). Similarly, according to a functional account, experienced regret should cause changes in cognition, behavior, and physiology that would extend to goal pursuits unrelated to the source of experienced regret.

There is some evidence to suggest that experienced regret alters cognitions, behaviors, and physiology in ways that might be relevant to goal pursuit, such as increased information search, attempts to undo regretted decisions, and activation of brain areas relevant to learning and planning (Bechara, Damasio, & Damasio, 2000; Beer, Knight, & D'Eposito, 2006; Camille et al., 2005; Coricelli, Dolan, & Sirigu, 2007; Shani & Zeelenberg, 2007; Summerville, 2011; Zeelenberg & Pieters, 2007). However, these investigations have examined decisions that involve a single dichotomous choice directly related to the situation that elicited regret. For example, participants in a gambling paradigm who chose one of two options and lost, were more likely to switch to the other option in the next gamble (Coricelli et al., 2007). While dichotomous choices

are involved in pursuing goals, the pursuit of goals in daily life frequently involves multiple decisions that occur over time and require motivation to sustain goal pursuit. To address the possibility that regret might be relevant to more complex goal pursuits, the present investigation examined the impact of experienced regret on the formation of intentions and motivations to pursue important life goals both related and unrelated to the situation that elicited regret.

Although studies based on functional accounts have demonstrated that emotions have multiple effects on cognition, behavior, and physiology, the present investigation focused on one such change likely to have implications for goal pursuit – narrowed attention. Research on negative affective states has shown that many negative emotions narrow attention and promote a local focus, which is theorized to increase analytic processing of the situation to prevent goal loss (Bodenhausen, Gabriel, & Lineberger, 2000; Bodenhausen et al., 1994; Gasper & Clore, 2002). For example, sadness promotes analytic thought and a local focus (e.g., Bodenhausen et al., 2000; Lench et al., 2015), which increases attention to the causes of past goal failures (Levine & Pizarro, 2004). Like sadness, regret is theorized to promote thoughts about past mistakes and thus should similarly narrow attention. In turn, narrowed attention has been associated with specific intentions for goal pursuit, which may increase the likelihood of goal achievement (e.g., Brandstatter, Lengfelder, & Gollwitzer, 2001; Forster & Higgins, 2005; Gable & Harmon-Jones, 2010; Gollwitzer & Sheeran, 2006; Sheeran, 2002; Smallman & McCulloch, 2012). Based on this theory and evidence, experienced regret

was hypothesized to predict goal-relevant intentions, with narrowed attention mediating this relationship.

In addition, experienced regret should increase motivation for goal pursuit because people want to avoid similar regrets in the future. Previous research suggests that other affective states indicate distance from a goal, and that different positive and negative emotions serve to regulate the degree of involvement in goal pursuit (Carver & Scheier, 1990). For example, anger indicates that people are doing worse than necessary for goal achievement, consequently enhancing motivation to try harder (Carver, 2004). Similarly, in a functional account, experienced regret should prompt a broad change in motivation, such that people would perceive their goals as more important, report more motivation to pursue goals, and plan to dedicate more time on goal pursuit.

Related Work on Anticipated Regret and Counterfactuals

Although not the primary purpose of this investigation, there is related work on the impact of anticipated regret and counterfactual thinking on attention and goal pursuit, which is relevant to predictions for experienced regret. Anticipated regret is the regret that people *predict* they will experience with different outcomes *before* they have actually made a decision (Zeelenberg & Pieters, 2007). For example, someone on a low-fat diet might anticipate the regret they will feel if they indulge in a juicy cheeseburger. Anticipated regret can motivate people to make decisions more congruent with their goals, such as the dieter avoiding the cheeseburger, because they desire to minimize future experienced regret (Zeelenberg & Pieters, 2007). Indeed, anticipated regret has been incorporated into rational economic models of choice because it strongly predicts

people's decisions (Bell, 1982; Loomes & Sugden, 1987). For example, anticipated regret has been shown to increase condom use, decrease consumption of alcohol, drugs, and junk food, and to improve driving safety (Richard, van der Pligt,& deVries, 1996a,b; Parker, Stradling, & Manstead, 1996). Furthermore, there is evidence to suggest that anticipated regret alters the way people make decisions, by signaling potential negative outcomes, and increasing pre-decision information search, deliberation, and careful processing (Janis & Mann, 1977; Keinan & Kivetz, 2008; Reb, 2008; Reb & Connolly, 2004; Zeelenberg, 1999). Anticipated regret may also facilitate the achievement of goals by increasing the consistency between intentions and behavior (Abraham & Sheeran, 2003). In contrast to anticipated regret, which is by definition tied to the eliciting situation (Frijda, 2004; Zeelenberg & Pieters, 2007), according to a functional account experienced regret should have a broader impact because the changes associated with the emotion should persist beyond the eliciting situation.

Counterfactuals are comparisons between an actual outcome and an alternative outcome to a situation (Roese, 1997). Research on counterfactuals suggests that certain types of counterfactual thinking may also narrow attention and facilitate the achievement of goals, and that their effect does persist beyond the eliciting situation (e.g., Epstude & Roese, 2008, 2010; Rim & Summerville, 2014; Smallman & McCulloch, 2012; Wong, Galinsky, & Kray, 2009). According to functional accounts of counterfactual thinking, different types of counterfactuals encourage different kinds of goals pursuit (Epstude & Roese, 2008; Markman & McMullen, 2003; Roese, 1997). Upward counterfactuals (i.e., how things might have been better) tend to promote self-improvement goals, whereas

downward counterfactuals (i.e., how things might have been worse) tend to promote self-enhancement goals (Epstude & Roese, 2008; Roese, 1997). Thus, upward counterfactuals are more likely to help people perform better in the future, and downward counterfactuals are more likely to help people feel better. A similar effect is found for additive (i.e., imagining a new outcome) and subtractive counterfactuals (i.e., removing an existing outcome), with additive counterfactuals leading to improved performance, and subtractive counterfactuals leading to improved mood (Roese, 1994). Furthermore, the content of counterfactuals can influence their impact on goal pursuit. Content-specific (i.e., counterfactuals relevant to the goal), upward counterfactuals have been shown to be particularly beneficial for goal pursuit by strengthening intentions to perform relevant behaviors (Epstude & Roese, 2008; Smallman, 2013; Smallman & Roese, 2009).

However, upward counterfactual thinking is not synonymous with experienced regret. Upward counterfactuals elicit a host of negative emotions, including regret, disappointment, guilt, and shame (Mandel, 2003; Niedenthal, Tangney, & Gavansky, 1994; Zeelenberg et al., 1998). Each of these emotions has different consequences for subsequent behavior (e.g., Fisher & Exline, 2010; van Dijk & Zeelenberg, 2002). As a result, inferences about the impact of regret on goal pursuits cannot be clearly drawn from studies that manipulate or measure counterfactual thinking. It cannot necessarily be inferred that changes resulting from counterfactual thinking are due to experienced regret, or that the impact of experienced regret on goals would be identical to that of counterfactuals. Thus, although certain types of counterfactuals have been shown to

increase the formation of goal-relevant intentions, it is unclear if these consequences can be attributed to experienced regret or the counterfactual mind-set more generally.

Research on anticipated regret and counterfactuals, as outlined above, was used to inform predictions about experienced regret, attention, and goal-relevant intentions. However, the primary purpose of this investigation was to assess the impact of experienced regret on goal relevant intentions and motivations from a functional perspective of emotion.

Present Investigation

The purpose of the present investigation was to examine the impact of experienced regret on the formation of goal-relevant intentions and motivations. Based on functional emotion theories, which posit emotions are coordinated responses that resolve challenges to goals, experienced regret was expected to increase the formation of goal relevant intentions and motivations. Consistent with findings regarding other emotions, experienced regret was hypothesized to predict intentions and motivations even in domains unrelated to the source of regret. The present investigation also assessed one potential mechanism that might contribute to this relationship – narrowed focus of attention.

In addition to these relationships, the potential influence of several moderators that might impact the relationship of regret to goal pursuit was assessed across studies. One moderator, type of counterfactual, was assessed because of past evidence suggesting that additive counterfactuals and subtractive counterfactuals may have different effects on goals, such that additive counterfactuals may be more beneficial than subtractive

counterfactuals for goal achievement (Epstude & Roese, 2008, 2010; Roese, 1997). A second moderator, action versus inaction, was assessed because actions tend to be regretted more in the short-term, and are often associated with subtractive counterfactuals, whereas inactions tend to be regretted more in the long-term, and are often associated with additive counterfactuals (Gilovich & Medvec, 1994; Kahneman & Miller, 1986; Roese, Hur, & Pennington, 1999). A third moderator, transience, was assessed because research suggests that viewing negative affect as transient may encourage mood reparation (Tice & Bratslavsky, 2000), which could reduce the motivational impact of regret. In addition, several personality measures were included to determine whether there were individual differences related to regret proneness and goal pursuit. Specifically, a global regret scale was included to assess the potential moderating effect of trait regret, and a hope scale was included to assess the potential moderating effect of trait hope (Snyder et al., 1991).

I examined the impact of regret on attention and goal-related intentions and motivations in three studies. The purpose of Study 1 was to examine the impact of experienced regret on attention and formation of goal-relevant intentions and motivations. Because anticipated regret has been clearly linked to decisions and motivations, Study 1 also included an anticipated regret condition in order to compare the effects of anticipated and experienced regret. The purpose of Study 2 was to examine the impact of experienced regret on attention and formation of goal-relevant intentions and motivations in the same domain or a different domain as the source of regret. The purpose of Study 3 was to determine the impact of regret on goal pursuit over

time. Thus, it examined the impact of experienced regret on the formation of goal-relevant intentions and motivations, and subsequent progress towards goal achievement, in a real world domain (New Year's resolutions). The following hypotheses were made:

Hypothesis 1: Experienced regret will increase goal-relevant intentions (reflected in number and specificity of intentions) for goals in the same and different domains as the situation that elicited regret.

Hypothesis 2: Experienced regret will increase motivation to pursue goals (reflected in perceived importance, motivation to achieve the goal, and plans to devote time to the goal) for goals in the same and different domains as the situation that elicited regret.

Hypothesis 3: The relationship of regret to goal-relevant intentions will be mediated by narrowed attention (reflected in a local versus global focus) for goals in the same and different domains as the situation that elicited regret (Studies 1 and 2).

Hypothesis 4: Anticipated regret will increase goal-relevant intentions (reflected in number of and specificity of intentions) for goals in the same, but not different, domains as the situation that elicited anticipated regret (Study 1).

Hypothesis 5: The intensity of experienced regret will predict progress toward achieving future goals unrelated to the source of experienced regret, and this relationship will be mediated by increased goal-relevant intentions and motivations (Study 3).

STUDY 1

The purpose of Study 1 was to examine the impact of experienced regret on attention and formation of goal-relevant intentions and motivations. Because anticipated regret has been clearly linked to decisions and motivations, Study 1 also included an anticipated regret condition in order to compare the effects of anticipated and experienced regret. Experienced regret was expected to increase the number and specificity of goal-relevant intentions (Hypothesis 1) and motivation to pursue goals (reflected in greater importance, motivation, and dedication; Hypothesis 2). Narrowed attention (local focus) was expected to mediate this impact of experienced regret on goal-relevant intentions and motivations (Hypothesis 3). Further, although experienced regret was expected to increase goal-relevant intentions in both same and different domains, anticipated regret was expected to only increase goal-relevant intentions in the same domain (Hypothesis 4).

Method

Participants

Undergraduate students in introductory psychology courses received credit for their participation (n = 148). A sample size of approximately 50 participants per cell was determined before data collection based on the recommendations in the psychological literature (e.g., van Voorhis & Morgan, 2007); no participants were excluded from the analyses. Ages ranged from 18 to 26 (M = 18.89, SD = 1.18), and the majority of participants were female (58%) and white (68%).

Procedure

Upon arrival, participants first rated their current emotions, including regret, on a scale ranging from 1 (*not at all*) to 9 (*extremely*; see Appendix for this and all other study materials). They were then instructed to describe in detail a future decision in which they anticipated regret, a past decision over which they experienced regret, or their last trip to the grocery store (a common neutral comparison condition; Lerner & Keltner, 2001). The use of narratives is a common and effective way to elicit emotions (Lench et al., 2011; Salas, Radovic, & Turnbull, 2012), and participants in past studies generally report increased regret after recalling a regretted experience (Kedia & Hilton, 2011; Roese & Summerville, 2005). Participants were given 10 minutes to write these narratives. Following this, participants again rated the intensity of their current emotions.

Next, participants completed a global-local task, during which they were presented with a series of global (large) images made up of closely spaced local (small) images (Gable & Harmon-Jones, 2008; Gasper & Clore, 2002; Kimchi & Palmer, 1982). There was one practice trial, followed by 24 actual trials, in which participants were presented with three figures, each comprising 3 to 16 local elements (squares or triangles). Each trial consisted of a standard figure (on the top) and two comparison figures (on the bottom). Participants pressed a key as quickly as possible to indicate their first impression of which of the two comparison figures best matched the standard. Previous research suggests that this task is an effective measure of global versus local processing in emotion research (Gable & Harmon-Jones, 2008; Fredrickson & Branigan, 2005; Gasper & Clore, 2002). Specifically, this task has demonstrated that many

negative emotions lead to local processing, whereas positive emotions and neutral states lead to global processing.

Participants then indicated an important goal and described how they intended to achieve that goal. They also rated the importance of the goal and their motivation to achieve the goal on a scale from 1 (*not at all important; not at all motivated*) to 7 (*extremely important; extremely motivated*). They also indicated the amount of time they intended to devote to the goal over the next month on a scale from 1 (*0-10 hours*) to 10 (*91-100 hours*). Finally, participants rated the regret they anticipated/experienced over the decision they described. They also completed several questionnaires, including a global regret scale (Schwartz et al. 2002), the hope scale (Snyder et al., 1991), and demographic questions. After completing these questionnaires participants were asked what they thought the study was about and whether they believed there was any relationship between the regret, global/local, and intention tasks to reveal potential suspicion. They were then debriefed and thanked for their participation. Although 24 participants reported suspicion that the study was about the impact of emotions on decisions, they were retained in the interest of being inclusive (results were similar with and without them).

Coding

Two independent coders coded participant responses for goal-relevant intentions, with discrepancies resolved by the principle investigator. Initial agreement was low for some of the variables, indicating the need for additional refinement of the coding system. First, they counted the number of intentions participants generated (r = .79). Second,

they coded the intentions for specificity (r = .42). These specificity ratings were based on how many details (what, when, where, how) they provided about the behaviors they intended to perform. Ratings were on a scale from 0 (*no details*) to 4 (*all 4 types of details*), with each type of detail counted once. Thus, participants received a higher rating if they provided more types of detail (e.g., that they planned to study at the library that night rather than simply that they planned to study), but not if they provided more of only one type of detail (e.g., studying and not partying, which are both a "what"). Third, the coders coded the relevance of the goal itself to the topic of the scenario (*Kappa* = .71). They categorized the goals as being same domain or different domain. To facilitate coders' ability to identify same versus different domain, they first categorized both the narratives and the goals into one of twelve different life domains (see Roese & Summerville, 2005). They then coded for whether the narratives were in the same or different domain. Coders were provided examples of what it meant to be in the same domain (e.g., narrative and goal both related to education), and what it meant to be in a different domain (e.g., narrative related to education, goal related to health).

The narratives were also coded for potential moderators, including subtractive versus additive counterfactuals, action versus inaction regrets, and transience. To control for the potential effects of additive versus subtractive counterfactuals, coders coded the counterfactual thoughts within the narratives as either subtractive (i.e., removing an existing behavior, such as not partying the night before an exam) or additive (i.e., adding a new behavior, such as studying their notes; *Kappa* = .37). To control for the potential effects of action versus inaction regrets, independent coders

categorized the topic of the narratives as the result of either an action (something the participant did or anticipated doing), or an inaction (something the participant did not do or anticipated not doing; *Kappa* = .62). Finally, to control for the potential effects of mood reparation when negative affect is perceived as transient, two independent coders categorized narratives as either transient (e.g., they described the regret as brief and/or easily resolved) or not transient (e.g., they described the regret as long lasting, continuous, and/or difficult to resolve; *Kappa* = .15).

Results and Discussion

Preliminary Analyses

As a manipulation check, an Analysis of Variance (ANOVA) was conducted, with emotion (anticipated regret, experienced regret, neutral) as the between subjects factor and intensity of experienced regret following the narrative as the outcome. Results suggested that the manipulation was effective, $F(2, 145) = 10.76$, $p < .001$, $\eta^2 = .13$. To account for number of analyses, a Bonferroni correction (for 3 tests) was applied, and only contrasts with $p < .017$ were considered significant. Participants reported significantly more experienced regret in the experienced regret condition ($M = 5.10$, $SD = 2.25$) than in the neutral condition ($M = 3.04$, $SD = 2.06$), $t(97) = 4.76$, $d = .95$ $p < .001$, 95% CI [-2.92, -1.20], as well as significantly more experienced regret in the anticipated regret condition ($M = 4.16$, $SD = 2.33$) than the neutral condition, $t(97) = 2.54$, $p = .013$, $d = .51$, 95% CI [-2.00, -.25]. Participants also reported more experienced regret in the experienced regret condition than in the anticipated regret

condition, $t(96) = 2.03$, $p = .045$, $d = .41$, 95% CI [-1.86, -.02], but this contrast was not significant given the adjusted threshold for significance.

To determine whether goal-relevant intentions and motivations were related, and the relationship with the moderator variables, correlations were conducted (Table 1). The goal-relevant intention variables (intentions, specificity) were positively correlated, as were all of the motivation variables (importance, motivation, dedication). Further, number of intentions was positively correlated with motivation, and specificity of intentions was negatively correlated with dedication. Scores on the global regret measure did not correlate with any of the goal-relevant intention or motivation variables. Trait hope was positively correlated with motivation, but not with any of the other goal-relevant intention or motivation variables.

Table 1. Correlations among goal-relevant intentions, motivations, and personality variables in Study 1.

	Intentions	Specificity	Importance	Motivation	Dedication	Global Regret
Specificity	.48**					
Importance	.08	-.03				
Motivation	.24**	.10	.64**			
Dedication	-.04	-.19*	.25**	.27**		
Global Regret	-.11	-.13	.08	.14	.08	
Hope	.15	.13	.13	.28**	.12	-.28**

Note: ** $p < .01$, and *$p < .05$.

Because of the positive correlations between number and specificity of intentions, and between importance, motivation, and dedication, reliability analyses were conducted to determine whether they could be combined into single scores of goal-

relevant intentions and motivations. The first reliability analysis was conducted on number and specificity of intentions. The results revealed a moderate alpha ($\alpha = .60$) for Study 1. However, subsequent reliability analyses revealed a much lower alpha in Study 2 ($\alpha = .22$), as well as a higher alpha in Study 3 ($\alpha = .72$), providing mixed results on the relationship between these two variables. Thus, they were kept separate for the purposes of this investigation. The second reliability analysis was conducted on importance, motivation, and dedication. The results revealed a low alpha ($\alpha = .38$), although excluding dedication greatly improved this alpha ($\alpha = .77$). This was consistent across studies (Study 2: $\alpha = .78$, Study 3: $\alpha = .84$). Thus, importance and motivation could be combined into one motivation score for subsequent analyses, with dedication as a separate measure of motivation.

Because Hypotheses 1-4 predict that experienced regret will impact goal pursuit in same and different domains, a Chi-Squared analysis was conducted on condition (experienced regret, anticipated regret; neutral was not included because only 1 participant wrote about a different domain goal) and goal domain (same, different). Results revealed that more participants wrote about a different domain goal in the experienced regret condition (88%), than the anticipated regret condition (69%), $X^2 = 4.91$, $p = .027$. The means for goal-relevant intentions and motivations for both same and different domains are reported in Table 2.

Table 2. Means for goal-relevant intentions and motivations in Study 1.

	Intentions		Specificity		Motivation		Dedication	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Same Domain								
Experienced Regret	2.75	.99	1.67	.52	6.58	.58	7.17	3.13
Anticipated Regret	2.87	1.36	2.00	.93	6.60	.51	6.00	3.36
Different Domain								
Experienced Regret	2.31	1.31	1.42	.73	6.48	.68	7.21	3.04
Anticipated Regret	2.63	1.63	1.53	.83	6.62	.60	6.94	2.53
Neutral	2.46	1.22	1.52	.86	6.49	.67	5.98	3.09

Hypothesis 1

The first hypothesis was that experienced regret would increase the number and specificity of goal-relevant intentions in same and different domains. Because only 15% of participants wrote about a same domain goal, the cell sizes were too small and unequal across conditions to conduct a MANOVA on the interaction between emotion and domain. Therefore, I instead conducted moderation analyses that utilized bootstrapping to determine if domain relevance affected the relationship between experienced regret and the number and specificity of goal-relevant intentions (using Process Model 1, 5,000 bootstrapped samples; Hayes, 2013).

The first analysis included condition (experienced regret, neutral) as a predictor of number of intentions generated. The results revealed no significant relationship between emotion (experienced regret, neutral) and number of intentions, b = -.25, $t(95)$ = 0.18, p = .854, 95% CI[-2.95, 2.45]. Furthermore, there was no significant interaction between emotion condition (experienced regret versus neutral) and domain relevance (same versus different) on number of intentions generated, b = .10, $t(95)$ = 0.08, p = .940, 95% CI[-2.64, 2.85]. The second analysis included condition (experienced regret,

neutral) as a predictor of specificity of intentions generated. The results also revealed no significant relationship between emotion (experienced regret, neutral) and specificity of intentions, b = .67, t(95) = 0.78, p = .439, 95% CI[-1.04, 2.37]. Furthermore, there no significant interaction between emotion condition (experienced regret versus neutral) and domain relevance (same versus different) on specificity of intentions generated, b = -.78, t(95) = 0.89, p = .375, 95% CI[-2.51, .98]. Thus, experienced regret did not increase goal-relevant intentions relative to a neutral condition, and Hypothesis 1 was not supported. A comparison of experienced regret versus anticipated regret is reported below under Hypothesis 4.

Hypothesis 2

The second hypothesis was that experienced regret would increase motivation to pursue goals, reflected in increases in motivation and dedication (plans to devote time to goal pursuit) in same and different domains. Because only 15% of participants wrote about a same domain goal, the cell sizes were too small and unequal across conditions to conduct a MANOVA on the interaction between emotion and domain. Therefore, I instead conducted moderation analyses utilizing bootstrapping to determine if domain relevance affected the relationship between experienced regret and goal-relevant motivations (using Process Model 1, 5,000 bootstrapped samples; Hayes 2013).

The first analysis included condition (experienced regret, neutral) as a predictor of motivation. The results also revealed no significant relationship between experienced regret and motivation, b = -.42, t(95) = 0.45, p = .651, 95% CI[-2.24, 1.40]. Furthermore, there was no significant interaction between emotion (experienced regret

versus neutral) and domain (same versus different) on motivation, b = .51, t(95) = 0.47, p = .643, 95% CI[-1.66, 2.68]. A second analysis included condition (experienced regret, neutral) as a predictor of dedication. The results revealed no significant relationship between emotion (experienced regret versus neutral) and dedication, b = 1.17, t(95) = 0.35, p = .726, 95% CI[-5.41, 7.75], and no significant interaction between emotion (experienced regret versus neutral) and domain (same versus different) on dedication to the goal, b = .06, t(95) = 0.02, p = .985, 95% CI[-6.64, 6.77]. Thus, Hypothesis 2 was not supported. A comparison of experienced regret versus anticipated regret is reported below under Hypothesis 4.

Hypothesis 3

The third hypothesis was that the relationship between regret and goal-relevant intentions would be mediated by narrowed attention (local focus) in same and different domains. Because Hypothesis 1 was not supported in Study 1, there was no relationship to examine mediation, although I report the results of these analyses below in order to fully explore the relationships included in Hypothesis 3.

Moderated mediation analyses were conducted (using Hayes Process Model 14, 5,000 bootstrapped samples; Hayes, 2013), with emotion (experienced regret versus neutral) as the predictor, goal-relevant intentions as outcome variables (number of intentions in the first analysis; specificity of intentions in the second analysis), local focus as a mediator, and domain (same versus different) as a moderator of the relationship between local focus and goal-relevant intentions. Across both analyses, contrary to predictions, emotion (experienced regret, neutral) significantly predicted

local focus, with greater local focus for the neutral condition than the experienced regret condition, b = -.14, $t(97)$ = 2.09, p = .040, 95% CI[-.27, -.01].

The first moderated mediation analysis examined the impact of experienced regret on number of intentions generated. Results revealed that the number of intentions was not significantly predicted by either emotion (experienced regret versus neutral), b = -.18, $t(94)$ = 0.70, p = .488, 95% CI[-.71, .34], or local focus, b = .55, $t(94)$ = 0.46, p = .648, 95% CI[-1.83, 2.93]. The results also revealed no significant interaction between local focus and domain (same versus different) on number of intentions, b = -.82, $t(94)$ = 0.65, p = .516, 95% CI[-3.33, 1.68]. Furthermore, the mediation path was not significant at either level of the moderator, as the 95% confidence interval for both same domain, b = -.08, 95% CI[-1.01, .16], and different domain, b = .04, 95% CI[-.06, .23], contained zero.

The second moderated mediation examined the impact of experienced regret on specificity of intentions generated. Results revealed that specificity was not significantly predicted by either emotion (experienced regret versus neutral), b = -.09, $t(94)$ = 0.53, p = .595, 95% CI[-.43, .25], or local focus, b = .17, $t(94)$ = 0.22, p = .827, 95% CI[-1.35, 1.68]. The results also revealed no significant interaction between local focus and domain (same versus different) on specificity, b = -.22, $t(94)$ = 0.27, p = .787, 95% CI[-1.82, 1.38]. Furthermore, the mediation path was not significant at either level of the moderator, as the 95% confidence interval for both same domain, b = -.02, 95% CI[-.71, .16], and different domain, b = .01, 95% CI[-.07, .09], contained zero. Thus, local focus

did not mediate a relationship between experienced regret and goal-relevant intentions in either a same or different domain, and Hypothesis 3 was not supported.

Hypothesis 4

The fourth hypothesis was that anticipated regret would increase the number and specificity of goal-relevant intentions and motivations in a same but not different domain. Because only 15% of participants wrote about a same domain goal, the cell sizes were too small and unequal across conditions to conduct a MANOVA on the interaction between emotion and domain. Therefore, as described above, I instead conducted moderation analyses to determine if domain relevance affected the relationship between anticipated regret and goal-relevant intentions and motivations (using Process Model 1, 5,000 bootstrapped samples; Hayes 2013).

The first analysis included condition (anticipated regret, neutral) as a predictor of number of intentions generated. Results revealed no significant relationship between emotion (anticipated regret versus neutral) and number of intentions, b = -.13, $t(95)$ = 0.09, p = ..927, 95% CI[-3.01, 2.74]. Furthermore, there was no significant interaction between emotion (anticipated regret versus neutral) and domain (same versus different) on number of intentions, b = .31, $t(95)$ = 0.21, p = .837, 95% CI[-2.64, 3.25]. A second analysis included condition (anticipated regret, neutral) as a predictor of specificity of intentions generated. Results revealed no significant relationship between emotion (anticipated regret versus neutral) and specificity, b = 1.00, $t(95)$ = 1.12, p = .264, 95% CI[-.77, 2.77]. Furthermore, there was no significant interaction between emotion

(anticipated regret versus neutral) and domain (same versus different) on specificity, b = 1.00, $t(95) = 1.10$, p = .275, 95% CI[-2.81, .81].

A third analysis included condition (anticipated regret, neutral) as a predictor of motivation. Results revealed no significant relationship between emotion (anticipated regret versus neutral) and motivation, b = -.40, $t(95) = 0.48$, p = .635, 95% CI[-2.07, 1.27]. Furthermore, there was no significant interaction between emotion (anticipated regret versus neutral) and domain (same, different) on motivation, b = .69, $t(95) = 0.80$, p = .424, 95% CI[-1.02, 2.40]. A fourth analysis included condition (anticipated regret, neutral) as a predictor of dedication. Results revealed no significant relationship between emotion (anticipated regret versus neutral) and dedication, b = .00, $t(95) = 0.00$, p = 1.00, 95% CI[-6.06, 6.06]. Furthermore, there was no significant interaction between emotion (anticipated regret versus neutral) and domain (same versus different) on dedication, b = .96, $t(95) = 0.31$, p = .759, 95% CI[-5.23, 7.16].

Study 1 also permitted a comparison between experienced regret and anticipated regret. To examine their relative effects on goal intentions and motivations, I conducted moderation analyses to determine if domain relevance affected the relationship between experienced regret versus anticipated regret and goal-relevant intentions and motivations (using Process Model 1, 5,000 bootstrapped samples; Hayes 2013). The first analysis included condition (experienced regret, anticipated regret) as a predictor of number of intentions generated. The results revealed no significant relationship between emotion (experienced regret versus anticipated regret) and number of intentions, b = -.12, $t(95) = 0.17$, p = .866, 95% CI[-1.48, 1.25]. Furthermore, there was no significant interaction

between emotion (experienced regret versus anticipated regret) and domain (same versus different) on number of intentions, b = -.20, t(95) = 0.26, p = .792, 95% CI[-1.72, 1.31]. A second analysis included condition (experienced regret, anticipated regret) as a predictor of the specificity of intentions. The results revealed no significant relationship between emotion (experienced regret versus anticipated regret) and specificity, b = -.33, t(95) = 0.88, p = .383, 95% CI[-1.09, .42]. Furthermore, there was no significant interaction between emotion (experienced regret versus anticipated regret) and domain (same versus different) on specificity, b = .22, t(95) = 0.53, p = .598, 95% CI[-.61, 1.06].

A third analysis included condition (experienced regret, anticipated regret) as a predictor of motivation. The results revealed no significant relationship between emotion (experienced regret versus anticipated regret) and motivation, b = -.02, t(94) = 0.06, p = .956, 95% CI[-.62, .58]. Furthermore, there was no significant interaction between emotion (experienced regret versus anticipated regret) and domain (same versus different) on motivation, b = -.12, t(94) = 0.37, p = .711, 95% CI[-.79, .54]. A fourth analysis included condition (experienced regret, anticipated regret) as a predictor of dedication. The results revealed no significant relationship between emotion (anticipated regret versus experienced regret) and dedication, b = 1.17, t(95) = 0.82, p = .412, 95% CI[-1.64, 3.97]. Furthermore, there was no significant interaction between emotion (experienced regret versus anticipated regret) and domain (same versus different) on dedication, b = -.90, t(95) = 0.57, p = .567, 95% CI[-4.01, 2.21]. Together, these results do not suggest that anticipated regret, compared to either neutral or

experienced regret, increases goal-relevant intentions in a same domain (or a different one), and Hypothesis 4 was not supported.

Table 3. Regression results for additional moderation analyses in Study 1.

	Experienced Regret v. Neutral			Experienced vs. Anticipated Regret		
	b	*p*	95% CI	*b*	*p*	95% CI
Intentions						
Counterfactuals				-.01	.982	-1.18, 1.15]
Actions				-..07	.914	[-1.41, 1.26]
Transience				-.47	.469	[-1.76, .82]
Global Regret	-.26	.174	[-.65, .12]	-.25	.287	[-.70, .21]
Hope	-.48	.469	[-1.80, .84]	-1.44	.050	[-2.88, .01]
Specificity						
Counterfactuals				-.05	.877	[-.71, .61]
Actions				-.75	.038	[-1.45, -.04]
Transience				-.41	.266	[-1.14, .32]
Global Regret	-.22	.077	[-.46, .02]	-.04	.757	[-.29, .21]
Hope	-.20	.642	[-1.03, .64]	-.82	.048	[-1.62, -.01]
Motivation						
Counterfactuals				.28	.277	[-.23, .79]
Actions				.15	.607	[-.43, .73]
Transience				-.32	.267	[-.24.,.88]
Global Regret	-.01	.969	[-.27, 1.35]	.07	.513	[-.13, .27]
Hope	-.47	.288	[-1.34, .40]	-.33	.305	[-.96, .31]
Dedication						
Counterfactuals				1.15	.349	[-1.27, 3.57]
Actions				1.39	.306	[-1.29, 4.07]
Transience				.62	.649	[-2.06, 3.29]
Global Regret	.98	.036	[.06, 1.90]	1.04	.026	[.13, 1.96]
Hope	.05	.976	[-3.12, 3.22]	1.28	.407	[-1.76, 4.31]

Note: Neutral narratives did not contain additive/subtractive counterfactuals, action/inaction regret, or clear indications of transience, so these moderations were limited to comparisons between experienced regret and anticipated regret.

Additional Moderation Analyses

To determine whether there were any underlying factors affecting the relationship between experienced regret and goal-relevant intentions and motivations,

moderation analyses were conducted that included counterfactuals (subtractive versus additive), actions (inaction versus action), transience (not transient versus transient), trait regret, trait hope, or attitudes toward goals as potential moderators (using Process Model 1, 5,000 bootstrapped samples; Hayes 2013). The results revealed several significant moderations – trait regret, trait hope, and action vs. inaction, which are detailed below. There was no evidence of significant moderation for any other moderating variables or outcome variables, with results for all moderators and outcome variables reported in Table 3.

A moderation analysis was conducted with emotion (experienced regret versus neutral) as the predictor and dedication as the outcome variable, with trait regret as a moderator. The results revealed a significant interaction between emotion (experienced regret versus neutral) and trait regret (Figure 1), such that participants high in trait regret indicated plans to spend more time on their goal when they were in the experienced regret condition compared to the neutral condition, $b = 2.41$, $t = 2.97$, $p = .004$, 95% CI[.87, 4.19]. A similar analysis comparing experienced and anticipated regret similarly revealed a significant interaction between emotion (experienced regret versus anticipated regret), such that participants high in trait regret indicated they would spend more time on their goal than when they were in the experienced regret condition compared to the anticipated regret condition, $b = 1.96$, $t = 2.42$, $p = .018$, 95% CI[.34, 3.48]. This suggests that experienced regret may be beneficial to goal pursuits for people who are prone to it, although this relationship was not consistently found across goal-related variables and was not consistently found across studies.

Figure 1. In Study 1, trait regret moderated the relationship between experienced regret and dedication to a goal. Participants high in trait regret were more dedicated than other participants when they experienced regret.

A moderation analysis was also conducted with emotion (experienced regret versus anticipated regret) as a moderator, number of intentions as the outcomes, and trait hope as the moderator. Results revealed a significant interaction between emotion (experienced regret versus anticipated regret) and trait hope (Figure 2), such that participants high in trait hope generated fewer intentions when in the experienced regret condition compared to the anticipated regret condition, b = -.90, t = -2.27, p = .026, 95% CI[-1.69, -.11]. A moderation analysis was also conducted with emotion (experienced regret versus anticipated regret) as the predictor, specificity of intentions as the outcome, and trait hope as a moderator. Results revealed a significant interaction between emotion (experienced regret versus anticipated regret) and trait hope (Figure 3), such that participants high in trait hope generated less specific intentions when in the

experienced regret condition compared to the anticipated regret condition, b = -.54, t = -2.44, p = .017, 95% CI[-.99, -.10]. Together with the moderation analysis on number of intentions, this may suggest that the experience of regret has a particularly negative impact for people prone to being hopeful.

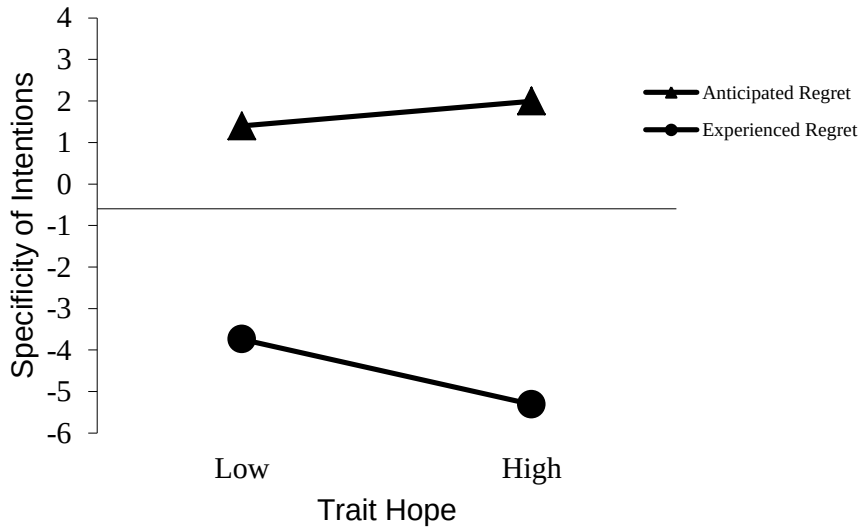

Figure 2. In Study 1, trait hope moderated the relationship between regret and specificity of intentions. Participants high in trait hope generated less specific intentions when they experienced regret compared to participants low in trait hope.

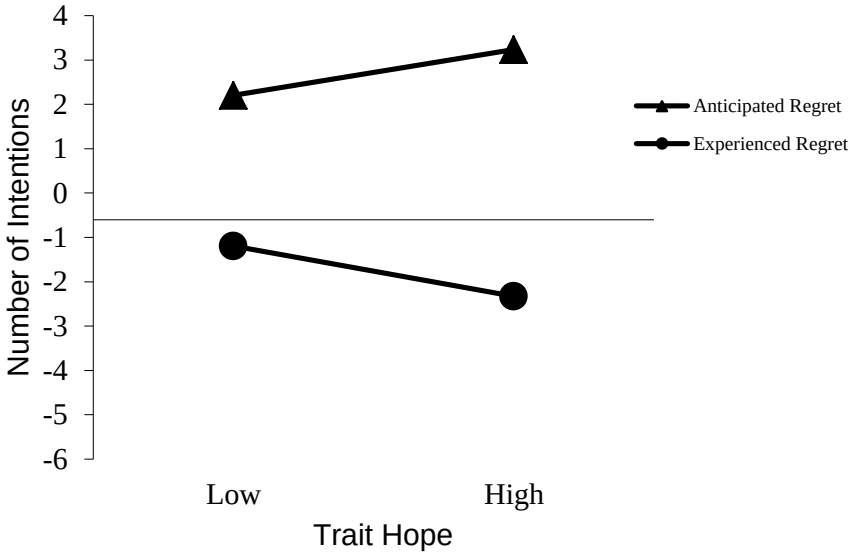

Figure 3. In Study 1, trait hope moderated the relationship between regret and number of intentions. Compared to low levels of trait hope, those high in trait hope generated fewer intentions when experiencing regret and more intentions when anticipating regret.

A moderation analysis was conducted with emotion (experienced regret versus anticipated regret) as the predictor, specificity of intentions as the outcome, and action (action versus inaction) as a moderator. Results revealed a significant interaction between emotion (experienced regret versus anticipated regret) and action (action versus inaction; Figure 4), such that participants who wrote about an action regret generated less specific intentions in the experienced regret condition, b = -.48, t = -2.67, p = .009, 95% CI-.84, -.12]. This suggests that the type of regret can change the impact of experienced regret on goal pursuit, although this relationship was not consistently found across goal-related variables or across studies.

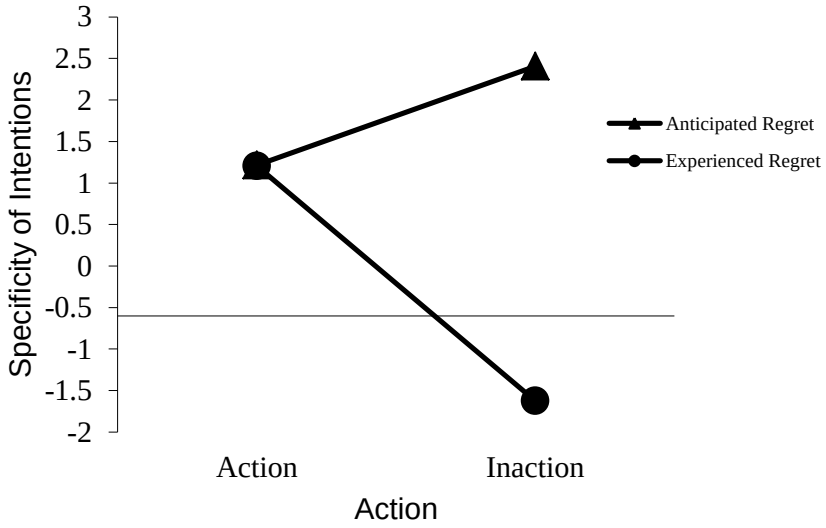

Figure 4. In Study 1, action moderated the relationship between experienced regret and anticipated regret on specificity of intentions. Experienced versus anticipated regret did not relate to the specificity of intentions for actions, but experienced regret resulted in fewer specific intentions than anticipated regret for inactions.

STUDY 2

The purpose of Study 2 was to examine the impact of experienced regret on attention and formation of goal-relevant intentions and motivations in the same domain or a different domain as the regret eliciting situation. In this study, the relevance of experienced regret to goal domain was directly assessed, such that the source of regret was held constant (using a hypothetical scenario about regret related to a social goal), and goal domain was manipulated (same/social versus different/health). The use of hypothetical scenarios also eliminated issues associated with narrative manipulations of experienced regret, including the potential effects of transience, action versus inaction, and subtractive versus additive counterfactuals. Experienced regret was expected to increase the number and specificity of goal-relevant intentions (Hypothesis 1), and motivation to pursue goals (reflected in greater importance, motivation, and dedication; Hypothesis 2) in both a same and different domain as the situation that elicited regret. Narrowed attention (local focus) was expected to mediate the impact of experienced regret on goal-relevant intentions and motivations (Hypothesis 3). Anticipated regret was not included in Study 2 because it was not expected to impact goal-relevant intentions and motivations in a different domain from the eliciting decision and the focus of the investigation was experienced regret.

Method

Participants

Undergraduate students in introductory psychology courses received credit for their participation (n = 215). A sample size of approximately 50 participants per cell was determined before data collection based on the recommendations in the psychological literature (e.g., van Voorhis & Morgan, 2007); no participants were excluded from the analyses. Ages ranged from 17 to 22 years (M = 18.82, SD = 0.98), and the majority of participants were female (54%) and white (63%).

Procedure

Participants rated their emotions as in Study 1. They then read a hypothetical regret scenario (choosing to participate in the worst of three clubs; adapted from Zeelenberg et al., 1998), or control scenario (choosing a club). Following this manipulation, participants again rated their emotions and completed the global-local task described in Study 1. Half of the participants then indicated an important social goal (same domain as the source of regret), and half indicated an important health goal (different domain as the source of regret). As in the previous study, this task was intended to assess how many responses people generate, as well as allow for an analysis of intention specificity. Finally, participants rated the regret they would feel if they were the person in the scenario, completed the global regret scale (to assess general tendencies to feel regret; Schwartz et al., 2002) and the hope scale (as another measure of goal pursuit; Snyder et al., 1991), and answered demographic questions. Afterwards they were asked what they thought the study was about and whether they believed there was

any relationship between the regret, global local, and intention tasks to reveal potential suspicion. They were then debriefed and thanked for their participation. Although 25 participants reported suspicion that the study was about the impact of emotions on decisions, they were retained in the interest of being inclusive (results were similar with and without them).

Coding

Two independent coders coded participant responses for goal-relevant intentions, with discrepancies resolved by the principle investigator. As in Study 1, they counted the number of intentions participants generated (r = .20), and coded the intentions for specificity (r = .27).

Results and Discussion

Preliminary Analyses

As a manipulation check, a *t*-test was conducted, with emotion (experienced regret, neutral) as the between subjects factor and intensity of experienced regret following the scenario as the outcome. The manipulation was successful, with participants reporting more experienced regret in the experienced regret conditions (M = 4.60, SD = 2.73) than in the neutral conditions (M = 3.22, SD = 2.08), $t(212) = 4.15$, $p <$ .001, 95% CI [.73, 2.04].

To examine the relationships among goal-relevant intentions and motivations and with the moderator variables, correlations were conducted (Table 4). The goal-relevant intention variables (intentions, specificity) were positively correlated, as were all of the motivation variables (importance, motivation, dedication). Scores on the global regret

measure did not correlate with any of the goal-relevant intention or motivation variables. Trait hope was positively correlated with number of intentions, motivation, and dedication (but not with specificity or importance).

Table 4. Correlations between goal-relevant intention, motivation, and personality variables in Study 2.

	Intentions	Specificity	Importance	Motivation	Dedication	Global Regret
Specificity	.14*					
Importance	.21**	.06				
Motivation	.16*	.01	.73**			
Dedication	.08	-.05	.31**	.26**		
Global Regret	-.03	-.05	.02	-.02	.06	
Hope	.14*	.05	.11	.22**	.18**	-.17*

Note: ** $p < .01$, and *$p < .05$.

Hypothesis 1

The first hypothesis was that experienced regret would increase the number and specificity of goal-relevant intentions in same and different domains. To examine this, a 2 x 2 MANOVA was conducted with emotion (experienced regret, neutral) and domain (same, different) as between subjects factors, and number of intentions and specificity of intentions as the outcomes. The results for number of intentions revealed no significant main effect of emotion, $F(1, 210) = 0.45$, $p = .505$, $\eta^2 = .00$, no significant main effect of domain, $F(1, 210) = 0.69$, $p = .407$, $\eta^2 = .00$, and no significant interaction, $F(1, 210) = 1.36$, $p = .244$, $\eta^2 = .01$. The results for specificity of intentions also revealed no significant main effect of emotion, $F(1, 210) = .04$, $p = .836$, $\eta^2 = .00$, and no significant interaction, $F(1, 210) = 1.04$, $p = .309$, $\eta^2 = .01$. However, there was a significant main

effect of goal domain, $F(1, 210) = 31.49$, $p = .000$, $\eta^2 = .13$, such that participants generated more specific intentions to pursue social goals ($M = 2.29$, $SD = 1.23$) compared to health goals ($M = 2.17$, $SD = .91$). Thus, experienced regret did not increase goal-relevant intentions or motivations in either a same or different domain, and Hypothesis 1 was not supported.

Hypothesis 2

The second hypothesis was that experienced regret would increase motivation to pursue goals, reflected in increases in motivation and dedication (plans to devote time to goal pursuit) in same and different domains. To examine this, a 2 x 2 MANOVA was conducted with emotion (experienced regret, neutral) and domain (same, different) as between subjects factors, and ratings of motivation and dedication as the outcomes. The results for motivation revealed no significant main effect of emotion, $F(1, 210) = 0.24$, $p = .620$, $\eta^2 = .00$, and no significant interaction, $F(1, 210) = 0.06$, $p = .807$, $\eta^2 = .00$. However, there was a significant main effect of goal domain, $F(1, 210) = 4.94$, $p = .027$, $\eta^2 = .02$, such that participants were more motivated to achieve social goals ($M = 5.75$, $SD = 1.01$) compared to health goals ($M = 5.42$, $SD = 1.17$). The results for dedication revealed no significant main effect of emotion, $F(1, 210) = 0.01$, $p = .980$, $\eta^2 = .00$, no significant main effect of domain, $F(1, 210) = 0.44$, $p = .507$, $\eta^2 = .00$, and no significant interaction, $F(1, 210) = 2.26$, $p = .135$, $\eta^2 = .01$. Thus, experienced regret did not increase ratings of motivation, or dedication in either same or different domains, and Hypothesis 2 was not supported.

Hypothesis 3

The third hypothesis was that the relationship between regret and goal-relevant intentions would be mediated by narrowed attention (local focus) in same and different domains. Because Hypothesis 1 was not supported in Study 2, there was no relationship to examine mediation, although I report the results of these analyses below in order to fully explore the relationships included in Hypothesis 3.

Moderated mediation analyses were conducted (using Hayes Process Model 14, 5,000 bootstrapped samples; Hayes, 2013), with emotion (experienced regret versus neutral) as the predictor, goal-relevant intentions as outcome variables, local focus as a mediator, and domain (same versus different) as a moderator of the relationship between local focus and goal-relevant intentions. Across both analyses, results revealed that there was no significant relationship between emotion (experienced regret versus neutral) and local focus, $b = .01$, $t(212) = 0.24$, $p = .811$, 95% CI[-.08, .10].

The first moderated mediation analysis examined the impact of experienced regret on the number of intentions generated. Results revealed that the number of intentions was not significantly predicted by either emotion (experienced regret versus neutral), $b = .10$, $t(209) = 0.66$, $p = .513$, 95% CI[-.20, .39], or local focus, $b = .75$, $t(209) = 1.10$, $p = .286$, 95% CI[-.84, 3.26]. The results also revealed no significant interaction between local focus and domain (same versus different) on number of intentions, $b = -.40$, $t(209) = 0.87$, $p = .386$, 95% CI[-1.29, .50]. Furthermore, the mediation path was not significant at either level of the moderator, as the 95%

confidence interval for both same domain, b = .00, 95% CI[-.03, .09], and different domain b = .00, 95% CI[-.31, .02], contained zero.

The second moderated mediation analyses examined the impact of experienced regret on the specificity of intentions generated. Results revealed that specificity of intentions was not significantly predicted by either emotion (experienced regret versus neutral), b = .02, $t(95)$ = 0.25, p = .803, 95% CI[-.13, .17], or local focus, b = .19, $t(95)$ = 0.51, p = .612, 95% CI[-.52, .89]. The results also revealed no significant interaction between local focus and domain (same versus different) on specificity, b = -.21, $t(95)$ = 0.91, p = .363, 95% CI[-.67, .24]. Furthermore, the mediation path was not significant at either level of the moderator, as the 95% confidence interval for both same domain, b = .00, 95% CI[-.01, .01], and different domain, b = .00, 95% CI[-.05, .02], contained zero. Thus, local focus did not mediate a relationship between experienced regret and goal-relevant intentions in either a same or different domain, and Hypothesis 3 was not supported.

Additional Moderation Analyses

To determine whether there were any underlying factors affecting the relationship between experienced regret and goal-relevant intentions and motivations, moderation analyses were conducted that included trait regret and trait hope as potential moderators (using Process Model 1, 5,000 bootstrapped samples; Hayes 2013). There was no evidence of significant moderation for any of the variables (see Table 5).

Table 5. Regression results for additional moderation analyses in Study 2.

	Experienced Regret v. Neutral		
	b	*p*	95% CI
Intentions			
Global Regret	.06	.613	[-.18, .30]
Hope	-.43	.237	[-1.15, .29]
Specificity			
Global Regret	-.02	.767	[-.15, .11]
Hope	-.21	.301	[-.60, .19]
Motivation			
Global Regret	.02	.898	[-.23, .26]
Hope	-.24	.515	[-.97, .49]
Dedication			
Global Regret	.01	.982	[-.61, .62]
Hope	.34	.711	[-1.48, 2.16]

STUDY 3

The purpose of Study 3 was to determine the impact of regret on goal pursuit over time. Thus, it examined the impact of experienced regret on the formation of goal-relevant intentions and motivations, and subsequent progress towards goal achievement, in a real world domain (New Year's resolutions). Experienced regret was expected to increase the number and specificity of goal-relevant intentions (Hypothesis 1) and motivations (reflected in importance, motivation, and dedication; Hypothesis 2). Further, the intensity of experienced regret was expected to predict progress toward achieving future goals unrelated to the source of regret, and it was expected that this relationship would be mediated by increased goal-relevant intentions and motivations (Hypothesis 5). Thus, this study was intended to address the immediate impact of experienced regret on goal-relevant intentions, as well as the factors that impact continued progress toward future goals.

New Year's offers a unique opportunity to examine the influence of regret on goal planning for two reasons. First, many people choose to let loose on New Year's Eve. Although fun at the time, this may result in subsequent regrets. Therefore, regretted experiences are likely to be particularly salient and potentially more intense than at other times of the year. Second, it is common for people to set a New Year's resolution on New Year's Day, which allows for an examination of important personal goals, and plans to achieve them, at their onset as well as at a later date. Follow-ups were completed between January 19th and 21st because this is around the time when

many people give up on their New Year's resolutions (January 17th has been dubbed "Ditch Your New Year's Resolution Day"; Burkley & Hatvany, 2014).

Method

Participants

Participants were part of a nationally representative sample recruited online through the Qualtrics Panel Service. This service made the study available to everyone in their response pool who were 18 or older and spoke English. Participants who completed the survey on January 8th (n = 254) were invited to take part in a follow-up study on January 18th (collection took place between January 19th and 21st; n = 103). They received $1.00 for participation each time. The sample size for time 1 (January 8th) was set at 250 to ensure a final sample size of 100 at time 2 (January 18th); data collection was terminated after these numbers were reached. Of the original sample that completed the study at both time points, 57 were excluded for not following directions (i.e., did not write about regret, did not indicate a resolution), resulting in a final sample size of 46. Ages ranged from 20 to 83 years (M = 47.87, SD = 15.78), and the majority of participants were female (80%) and white (83%).

Procedure

On January 8th (Time 1), participants rated their emotions, including regret, on a scale from 1 (*not at all*) to 9 (*extremely*). They then described in detail a recent time when they experienced regret. Previous research suggests that such personal narratives are an effective method to elicit emotions (Lench et al., 2011; Salas et al., 2012), including regret (Kedia & Hilton, 2011; Roese & Summerville, 2011). Following the

narrative, they indicated their New Year's resolution and any associated intentions to achieve it. This was selected as an initial measure of goal behavior because it indicates fluency of responses (how many intentions people spontaneously generate) and allows for an analysis of intention specificity. They rated the importance of this resolution, their motivation to achieve it on a scale from 1 (*not at all*) to 7 (*extremely*), as well as how much time they intended to devote to it over the next month on a scale from 1 (*0-10 hours*) to 10 (*91-100 hours*). They also rated the regret they experienced at the time of the event in the narrative, the regret they experienced over their success toward their previous New Year's Resolution, and the regret they anticipated if they did not succeed with this year's Resolution on a scale from 1 (*not at all*) to 9 (*extremely*). Following this, they completed several questionnaires, including a global regret scale (to assess general tendencies to feel regret; Schwartz et al., 2002) and the hope scale (as another measure of goal pursuit; Snyder et al., 1991).

On January 19th-21st (Time 2), participants again rated their current regret and their regret at the time of the narrative on a scale from 1 (*not at all*) to 9 (*extremely*). Following this, they were reminded of their resolution, and rated its importance and their motivation to achieve it on a scale from 1 (*not at all*) to 7 (*extremely*), and the amount of time they still intended to devote to it over the next month on a scale from 1 (*0-10 hours*) to 10 (*91-100 hours*). They also rated their progress towards achieving their resolution on a scale from 1 (*not at all successful*) to 5 (*extremely successful*), and indicated whether or not they had kept it.

Coding

Two independent coders coded participant responses to the goal task, with discrepancies resolved by the principle investigator. In some cases, the reliability coefficients were low, indicating the need for future refinement of the coding scheme. As in Studies 1 and 2, they first counted the number of different intentions participants generated (r = .82), and then coded the intentions for specificity (r = .74). The coders then coded for whether the narratives were in the same or different domain (*Kappa* = .47). To facilitate coders' ability to identify same versus different domain, they first categorized both the narratives and the goals into one of twelve different life domains (see Roese & Summerville, 2005). Coders were provided examples of what it meant to be in the same domain (e.g., narrative and goal both related to education), and what it meant to be in a different domain (e.g., narrative related to education, goal related to health).

As in Study 1, the narratives were also coded for potential moderators, including subtractive versus additive counterfactuals, action versus inaction regrets, and transience. First, they coded the counterfactual thoughts within the narratives as either subtractive (i.e., removing an existing behavior, such as not partying the night before an exam) or additive (i.e., adding a new behavior, such as studying their notes; *Kappa* = .39). Second, although participants were instructed to describe a regret from the night before, which would likely be an action, many did not follow directions (29%). This made it necessary to have two independent coders categorize the topic of the narratives as the result of either an action (something the participant did), or an inaction (something

the participant did not do; *Kappa* = .53). Finally, the coders categorized narratives as either transient (e.g., they described the regret as brief and/or easily resolved) or not transient (e.g., they described the regret as long lasting, continuous, and/or difficult to resolve; *Kappa* = .45).

Results and Discussion

Preliminary Analyses

The manipulation was successful, with participants reporting greater experienced regret after writing the narratives ($M = 5.13$, $SD = 2.67$) than before ($M = 3.74$, $SD = 2.17$), $t(45) = 3.66$, $p < .001$, $d = .57$ 95% CI [.69, 2.12].

To determine whether goal-relevant intentions and motivations were related, and the relationship with the moderator variables, correlations were conducted (Table 6). The Time 1 goal-relevant intention variables (intentions, specificity) were positively correlated, as were the Time 1 motivation variables of importance and motivation (neither were correlated with dedication, however). Further, intentions and importance (Time 1) were highly correlated. Several variables at Time 1 were also correlated with variables at Time 2: intentions (Time 1) were positively correlated with importance and dedication (Time 2), importance (Time 1) was correlated with importance and motivations (Time 2), and motivation (Time 1) was correlated with importance, motivation, success, and whether they had kept their resolutions (Time 2). Scores on the global regret measure were not correlated with any of the goal-relevant intention or motivation variables. As with importance and motivation at Time 1, importance and motivation at Time 2 were positively correlated. Thus, a reliability analysis was

Table 6. Correlations between goal-relevant intention, motivation, and personality variables in Study 3.

	Intentions (T1)	Specificity (T1)	Importance (T1)	Motivation (T1)	Dedication (T1)	Importance (T2)	Motivation (T2)	Dedication (T2)	Success (T2)	Kept (T2)	Trait Regret
Specificity (T1)	.70**										
Importance (T1)	.30*	.04									
Motivation (T1)	.26	.07	.75**								
Dedication (T1)	-.05	.08	-.01	.05							
Importance (T2)	.30*	.22	.45**	.49**	-.17						
Motivation (T2)	.25	.13	.34*	.53**	-.20	.75**					
Dedication (T2)	.32*	.28	.19	.26	.12	.26	.32*				
Success (T2)	.16	.09	.33*	.42**	.01	.42**	.53**	.23			
Kept (T2)	.06	.03	.29	.37*	.15	.34*	.42**	.23	.69**		
Trait Regret	.04	.10	-.05	-.22	.16	-.14	-.15	.14	.00	-.03	
Trait Hope	.15	.01	.12	.15	.12	.24	.31*	-.11	.36*	.27	-.28

Note: ** $p < .01$, and *$p < .05$.

conducted to determine whether these variables could also be combined. The results revealed a high alpha value ($\alpha = .86$); importance and motivation at Time 2 were combined into a single motivation score for all subsequent analyses.

Hypothesis 1

The first hypothesis was that experienced regret would increase the number and specificity of goal-relevant intentions in same and different domains. I conducted moderation analyses that utilized bootstrapping to determine if domain relevance affected the relationship between experienced regret and the number and specificity of goal-relevant intentions (using Process Model 1, 5,000 bootstrapped samples, Hayes, 2013).

The first analysis included intensity of experienced regret as a predictor of number of intentions generated. The results revealed a significant relationship between the intensity of experienced regret and number of intentions, $b = .22$, $t(42) = 2.06$, $p = .046$, 95% CI[.00, .44], such that people experiencing intense regret generated more goal-relevant intentions. In addition, there was a significant interaction between intensity of experienced regret and domain (same versus different), $b = -.36$, $t(42) = 2.73$, $p = .01$, 95% CI[-.63, -.09]. Thus, the relationship between intensity of experienced regret and number of goal-relevant intentions was moderated by domain (Figure 5). Participants who wrote about a same domain goal generated significantly more goal-relevant intentions when experiencing intense regret, $b = .22$, $t(42) = 2.06$, $p = .046$, 95% CI[.00, .44], whereas participants who wrote about a different domain goal

generated marginally fewer goal-relevant intentions when experiencing intense regret, b = -.14, t = 1.81, p = .078, 95% CI[-.30, .02].

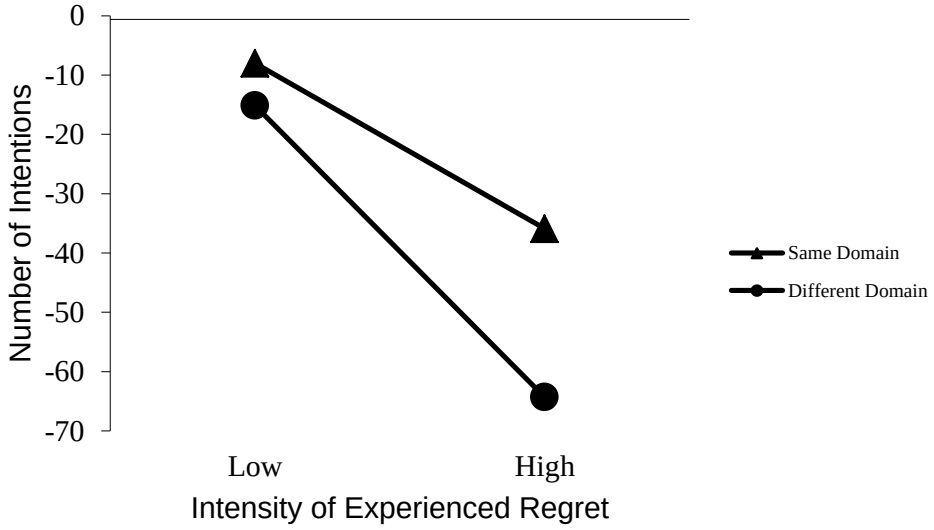

Figure 5. In Study 3, goal domain moderated the relationship between intensity of experienced regret and number of intentions generated. Participants high in experienced regret generated fewer goal-relevant intentions, particularly for goals in a different domain.

A second analysis included intensity of experienced regret as a predictor of specificity of intentions generated. The results for the moderation analysis on specificity revealed a significant relationship between the intensity of experienced regret and the specificity, b = .12, t(42) = 2.29, p = .027, 95% CI[.01, .23]. In addition, there was a significant interaction between intensity of experienced regret and domain (same versus different), b = -.20, t(42) = 23.14, p = .003, 95% CI[-.34, -.07]. Thus, the relationship between intensity of experienced regret and specificity of goal-relevant intentions was

moderated by domain (Figure 6). Participants who wrote about a same domain goal generated significantly more specific intentions when experiencing intense regret, b = .12, $t(42) = 2.29$, p = .027, 95% CI[.01, .23], whereas participants who wrote about a different domain goal generated marginally fewer specific intentions when experiencing intense regret, b = -.07, t = 0.04, p = .086, 95% CI[-.14, .01]. Taken together, these results suggest that experienced regret may have a positive impact on goal-relevant intentions in a same domain, but a somewhat negative impact on goal relevant intentions in a different domain, which was contrary to expectations (Hypothesis 1 was partially supported, but only for the same domain).

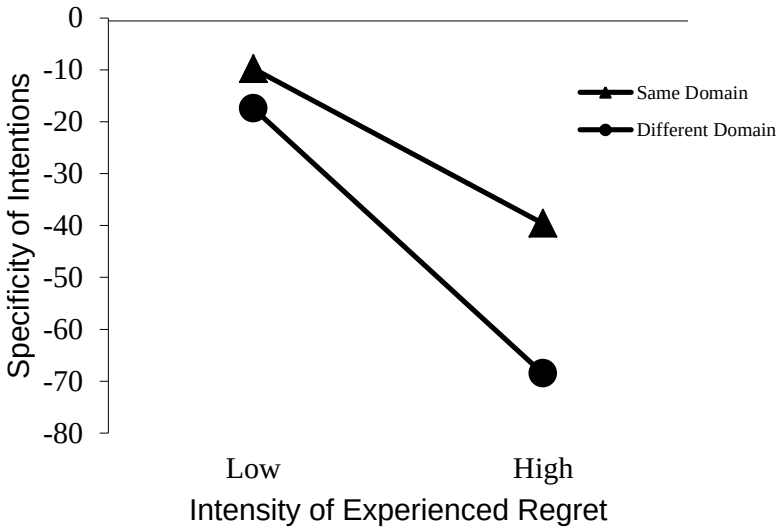

Figure 6. In Study 3, goal domain moderated the relationship between intensity of experienced regret and specificity of intentions. Participants high in experienced regret were less specific in the intentions they generated, particularly for different domain goals.

Hypothesis 2

The second hypothesis was that experienced regret would increase motivation to pursue goals, reflected in increases in motivation and dedication (plans to devote time to goal pursuit) in same and different domains. I conducted moderation analyses that utilized bootstrapping to determine if domain relevance affected the relationship between experienced regret and the number and specificity of goal-relevant intentions (using Process Model 1, 5,000 bootstrapped samples, Hayes, 2013).

The first analysis included intensity of experienced regret as a predictor of motivation. The results revealed no significant relationship between the intensity of experienced regret and motivation, $b = .06$, $t(42) = 0.67$, $p = .505$, 95% CI[-.13, .26]. Furthermore, there was no significant interaction between intensity of experienced regret and domain (same versus different) on motivation, $b = -.09$, $t(45) = -0.74$, $p = .464$, 95% CI[-.33, .15]. A second analysis included intensity of experienced regret as a predictor of dedication. The results revealed no significant relationship between the intensity of experienced regret and dedication, $b = .47$, $t(42) = 1.47$, $p = .148$, 95% CI[-.17, 1.10], and no significant interaction between intensity of experienced regret and domain (same versus different) on dedication, $b = -.24$, $t(42) = 0.60$, $p = .551$, 95% CI[-1.03, .56]. Thus, the intensity of experienced regret did not increase goal-relevant motivations in either a same or different domain, and Hypothesis 2 was not supported. (Hypothesis 3 and 4 are not addressed in Study 3).

Hypothesis 5

The fifth hypothesis was that the intensity of experienced regret at Time 1 would predict progress toward achieving future goals (as reflected in Time 2 ratings of importance, motivation, and dedication, as well as success towards goal achievement, and kept resolutions), and that this relationship would be mediated by increased goal relevant intentions and motivations (Time 1 intentions, specificity, importance, motivation, and dedication). Moderated mediation analyses were conducted (using Hayes Process Model 7, 5,000 bootstrapped samples; Hayes, 2013), with intensity of experienced regret as the predictor, progress variables as outcomes, goal-relevant intentions and motivations as mediators, and domain (same versus different) as a moderator of the relationship between experienced regret and measures of goal-relevant intentions and motivations.

The results for the relationships between intensity of experienced regret and the mediator variables, as well as the moderating roll of domain, were identical to those reported above for Hypotheses 1 (intensity of experienced regret and goal-relevant intentions) and Hypothesis 2 (intensity of experienced regret and goal-relevant motivations). The results for the moderated mediation analyses relevant to Hypothesis 5 are reported in Table 7. Across analyses, results revealed that there was no significant relationship between intensity of experienced regret at Time 1 and goal progress at Time 2, nor any significant relationship between the goal relevant intentions and motivations at Time 1 and goal progress at Time 2. More importantly, however, none of the mediation paths were significant (the 95% confidence intervals for each mediator in

Table 7. Regression coefficients for moderated mediation analyses in Study 3.

	Motivation			Dedication			Progress			Kept Resolution		
	b	*p*	95% CI	*b*	*p*	95% CI	*b*	*p*	95% CI	*b*	*p*	95% CI
Direct Effects												
Experienced Regret	-.06	.383	[-.18, .07]	.10	.575	[-.26, .45]	-.14	.055	[-.28, .00]	.05	.144	[-.02, .13]
Intentions	.04	.861	[-.38, .45]	.47	.420	[-.69, 1.62]	.01	.973	[-.46, .48]	.04	.745	[-.20, .28]
Specificity	.30	.453	[-.51, 1.12]	.71	.529	[-1.54, 2.95]	.09	.838	[-.82, 1.00]	-.04	.861	[-.50, .42]
Motivation	.66	.001	[.30,1.02]	.54	.280	[-.46, 1.55]	.54	.011	[.13, .94]	-.25	.019	[-.45, -.04]
Dedication	-.07	.179	[-.17, .03]	.08	.576	[-.20, .36]	.03	.604	[-.46, .48]	-.04	.202	[-.09, .02]
Indirect Effects												
Intentions (Same)	.01		[-.08, .08]	.10		[-.10, .50]	.00		[-.13, .11]	.01		[-.05, .10]
Intentions (Diff)	-.01		[-.07, .04]	-.07		[-.35, .06]	.00		[-.09, .08]	-.01		[-.06, .03]
Specificity (Same)	.04		[-.03, .17]	.08		[-.09, .56]	.01		[-.10, .17]	.00		[-.06, .07]
Specificity (Diff)	-.03		[-.12, .02]	-.06		[-.35, .08]	-.01		[-.11, .09]	.00		[-.06, .07]
Motivation (Same)	.04		[-.12, .25]	.03		[-.09, .46]	.03		[-.09, .22]	-.02		[-.11, .04]
Motivation (Diff)	-.02		[-.10, .07]	-.01		[-.16, .05]	-.01		[-.09, .06]	.01		[-.03, .04]
Dedication (Same)	-.03		[-.18, .01]	.04		[-.07, .28]	.01		[-.03, .14]	-.02		[-.08, .01]
Dedication (Diff)	-.02		[-.10, .01]	.02		[-.04, .19]	.01		[-.02, .08]	-.01		[-.05, .01]

same and different domains contained zero). Thus, the intensity of experienced regret at Time 1 did not predict progress toward achieving future goals, and Hypothesis 5 was not supported.

Additional Analyses on Time 2 Goal Progress

Although intensity of experienced regret at Time 1 failed to predict goal progress at Time 2, other forms of regret (e.g., anticipated regret when considering resolution failure at Time 1, retrospective regret when considering past resolution failures at Time 1, or experienced regret at Time 2) may be better predictors of goal progress. To examine this possibility, linear regression analyses were conducted, with regret ratings (experienced regret Time 1, anticipated regret Time 1, retrospective regret Time 1, experienced regret Time 2) as predictors, and goal progress variables as outcomes in separate analyses.

The first linear regression was conducted with regret ratings (experienced regret Time 1, anticipated regret Time 1, retrospective regret Time 1, experienced regret Time 2) as predictors and Time 2 motivation as the outcome variableThe results revealed that, when controlling for other regret ratings, there was no significant relationship between intensity of experienced regret at Time 1 and motivation at Time 2, b = -.04, t = 0.50, p = .624, 95% CI[-.20, .12], intensity of anticipated regret at Time 1 and motivation at Time 2, b = .04, t = 0.07, p = .670, 95% CI[-.15, .22], or intensity of experienced regret at Time 2 and motivation at Time 2, b = .02, t = 0.19, p = .853, 95% CI[-.17, .20]. However, there was a marginally significant relationship between intensity of retrospective regret, b = -.19, t = -2.00, p = .052, 95% CI[-.38, .00], such that

participants reporting greater retrospective regret over their resolution last year were less motivated to continue to pursue their current resolution.

The second linear regression was conducted with regret ratings (experienced regret at Time 1, anticipated regret at Time 1, retrospective regret at Time 1, experienced regret at Time 2) as predictors and Time 2 dedication as the outcome variable. The results revealed that, when controlling for other regret ratings, there was no significant relationship between intensity of experienced regret at Time 1 and dedication at Time 2, b = -.04, t = 0.20, p = .847, 95% CI[-.40, .33], intensity of retrospective regret at Time 1 and dedication at Time 2, b = -.33, t = 1.48, p = .147, 95% CI[-.77, .12], or intensity of experienced regret at Time 2, b = .38, t = 1.78, p = .08, 95% CI[-.05, .81]. However, there was a significant relationship between intensity of anticipated regret at Time 1 and dedication at Time 2, b = .45, t = 2.15, p = .037, 95% CI[.03, .88], such that participants reporting greater anticipated regret over the possibility of not keeping their resolution indicated plans to continue to devote more time to it.

The third linear regression was conducted with regret ratings (experienced regret Time 1, anticipated regret Time 1, retrospective regret Time 1, experienced regret Time 2) as predictors and Time 2 success as the outcome variable. The results revealed that, when controlling for other regret ratings, there was no significant relationship between intensity of experienced regret at Time 1 and success at Time 2, b = -.12, t = 1.39, p = .75, 95% CI[-.28, .05], intensity of anticipated regret at Time 1 and success at Time 2, b = .05, t = 0.55, p = .583, 95% CI[-.14, .25], intensity of retrospective regret at Time 1 and success at Time 2, b = -.03, t = 0.32, p = .754, 95% CI[-.24, .17], or intensity of

experienced regret at Time 2 and success at Time 2, b = -.06, t = 0.63, p = .535, 95% CI[-.26, .14].

The fourth linear regression was conducted with regret ratings (experienced regret at Time 1, anticipated regret at Time 1, retrospective regret at Time 1, experienced regret at Time 2) as predictors and whether they had kept their resolution at Time 2 as the outcome variable. The results revealed that, when controlling for other regret ratings, there was no relationship between intensity of experienced regret at Time 1 and kept resolution at Time 2, b = -.01, t = 0.28, p = .781, 95% CI[-.09, .07], intensity of anticipated regret at Time 1 and kept resolution at Time 2, b = .02, t = 0.49, p = .625, 95% CI[-.07, .11], or intensity of retrospective regret, b = -.02, t = -0.49, p = .63, 95% CI[-.12, .07]. However, there was a marginally significant relationship between intensity of anticipated regret at Time 1 and kept resolution at Time 2, b = -.09, t = 2.00, p = .052, 95% CI[-.18, .00].

Additional Moderation Analyses

To determine whether there were any underlying factors affecting the relationship between experienced regret and goal-relevant intentions and motivations, moderation analyses were conducted that included counterfactuals (subtractive versus additive), actions (inaction versus action), transience (not transient, transient), trait regret, or trait hope as potential moderators (using Process Model 1, 5,000 bootstrapped samples; Hayes 2013). The results revealed several significant moderations – specifically between trait hope and Time 1 variables, and global regret and Time 2

variables, detailed below. There was no evidence of significant moderation for any other moderating variables or outcome variables (Tables 8 and 9).

Table 8. Regression results for additional moderation analyses on Time 1 variables in Study 3.

	Intensity of Experienced Regret		
	b	*p*	95% CI
Intentions			
Counterfactuals	.10	.501	[-.19, .38]
Actions	.03	.868	[-.29, .34]
Transience	-.06	.680	[-.37, .24]
Global Regret	-.02	.723	[-.16, .11]
Hope	-.13	.403	[-.45, .19]
Specificity			
Counterfactuals	.07	.335	[-.07, .21]
Actions	.03	.710	[-.13, .19]
Transience	-.12	.099	[-.27, .02]
Global Regret	.02	.626	[-.05, .08]
Hope	-.06	.466	[-.22, .10]
Motivation			
Counterfactuals	-.15	.207	[-.38, .08]
Actions	.05	.676	[-.20, .31]
Transience	-.10	.435	[-.34, .15]
Global Regret	.06	.237	[-.04, .16]
Hope	-.35	.005	[-.59, -.11]
Dedication			
Counterfactuals	.19	.640	[-.61, .98]
Actions	.18	.682	[-.70, 1.05]
Transience	-.01	.981	[-.86, .84]
Global Regret	.22	.230	[-.14, .58]
Hope	.21	.639	[-.67, 1.08]

Table 9. Regression results for additional moderation analyses on Time 2 variables in Study 3.

	Intensity of Experienced Regret		
	b	*p*	95% CI
Motivation			
Counterfactuals	.15	.313	[-.15, .44]
Actions	.15	.356	[-.17, .46]
Transience	-.15	.337	[-.48, .17]
Global Regret	.05	.439	[-.08, .19]
Hope	-.22	.169	[-.55, .10]
Dedication			
Counterfactuals	.39	.287	[-.34, 1.12]
Actions	.58	.151	[-.22, 1.37]
Transience	.18	.651	[-.62, .98]
Global Regret	.46	.004	[.15, .76]
Hope	-.53	.201	[-1.34, .29]
Success			
Counterfactuals	-.06	.693	[-.36, .24]
Actions	.14	.398	[-.18, .46]
Transience	-.05	.755	[-.37, .27]
Global Regret	.11	.113	[-.03, .24]
Hope	-.08	.606	[-.41, .24]
Kept Resolution			
Counterfactuals	-.02	.819	[-.13, .06]
Actions	.02	.822	[-.15, .18]
Transience	-.04	.614	[-.21, .12]
Global Regret	.04	.237	[-.03, .11]
Hope	-.10	.216	[-.27, .73]

To examine the effect of trait hope on the relationship between experienced regret and motivation, a moderation analysis was conducted, with the intensity of experienced regret as the predictor, motivation as the outcome variable, and trait hope as the moderator. The results revealed a significant interaction between intensity of experienced regret and trait hope, such that participants low in trait hope were more motivated to achieve their goal when experiencing intense regret, $b = .22$, $t = 0.01$, $p = .01$, 95% CI[.05, .39], whereas those high in trait hope were less motivated to achieve

their goal when experiencing intense regret (although this effect was not significant), b = -.09, t = 1.33, p = .191, 95% CI[-.23, -.05] (Figure 7). This is consistent with the moderation analysis on hope from Study 1, suggesting that the more hopeful a person tends to be, the more negative an impact the experience of regret might have upon their behavior, although the relationship was not consistent across goal-related variables and across all studies.

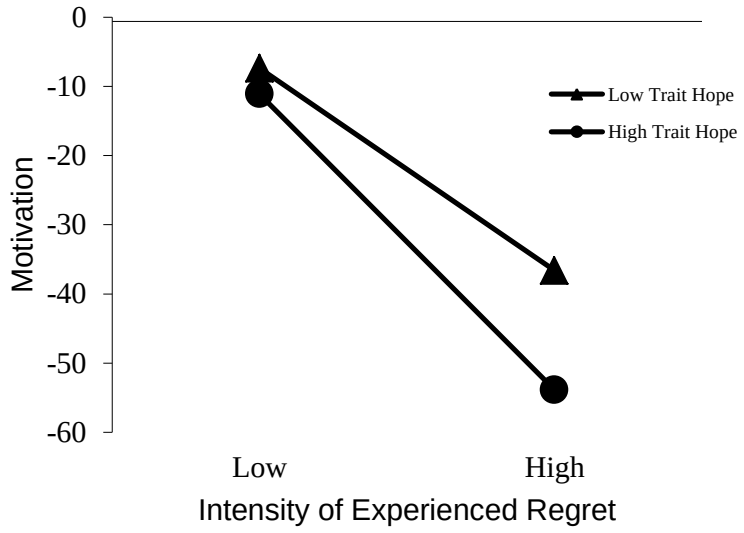

Figure 7. In Study 3, trait hope moderated the relationship between intensity of regret and motivation. Participants high in experienced regret were less motivated to achieve a goal, particularly when they were high in trait hope.

GENERAL DISCUSSION

Functional theories of emotion posit that emotions, such as regret, are associated with broad changes in behavior, cognition, and physiology that promote adaptive responses to challenges to goals (e.g., Lench et al., 2015). However, most of these theories focus on emotions present early in development, and have seldom been applied to emotions that occur later, such as experienced regret. By applying a functional perspective to experienced regret, I was able to make novel predictions about the impact of experienced regret on important behaviors, such as goal pursuit. Accordingly, I predicted that broad changes in cognition associated with experienced regret would enhance goal pursuit by narrowing attention and consequently increasing the formation of goal-relevant intentions, as well as by increasing motivation to pursue goals and thus avoid similar regrets in the future.

Does Experienced Regret Impact Goal Pursuit?

In three studies, participants experiencing regret wrote about an important goal, indicating plans and motivations for achieving that goal. Study 1 examined the impact of experienced regret on attention and the formation of goal-relevant intentions and motivations, and allowed for a comparison to anticipated regret (which has been more clearly linked to motivations). Study 2 examined the impact of experienced regret on attention and formation of goal-relevant intentions and motivations in same and different domains as the source of regret. And Study 3 examined the impact of regret on goal-

relevant intentions and motivations, as well as goal progress, over time. The results for these studies are discussed according to associated hypotheses.

The first hypotheses predicted that experienced regret would increase the number and specificity of goal-relevant intentions for goals in the same and different domains as the situation that elicited the regret. The results in studies 1 and 2 did not support this hypothesis. Participants did not generate more goal-relevant intentions when experiencing regret, compared to a neutral condition, regardless of whether their goal was in a same or different domain as the source of experienced regret. Study 3 provided partial support for this hypothesis, but only for within the same domain. Participants in the experienced regret condition, who wrote about a same domain goal, generated more specific intentions compared to a neutral condition.

The second hypothesis predicted that experienced regret would increase motivation to pursue goals (as reflected in perceived importance, motivation to achieve the goal, and plans to devote time to the goal) for goals in the same and different domains as the situation that elicited regret. Results in Studies 1, 2, and 3 did not support this hypothesis. Participants in Studies 1 and 2 did not report more goal-relevant motivations when experiencing regret compared to a neutral state, regardless of whether their goal was in a same or different domain as the source of experienced regret. Participants in Study 3 did not report more goal-relevant motivations with increases in the intensity of their experienced regret in either a same or different goal domain.

The third hypothesis predicted that the relationship between experienced regret and goal-relevant intentions would be mediated by narrowed attention (reflected in a

local versus global focus) for goals in the same and different domains as the situation that elicited regret. This hypothesis was only assessed in Studies 1 and 2, and it was not supported in either study. Because Hypothesis 1 was not supported, there was no relationship to examine with mediation, so this was not surprising. It was surprising, however, that in Study 1 participants experiencing regret had a broader (more global) focus. This could suggest that experienced regret is less like sadness than anger, which is a negative emotion that broadens attention (Bodenhausen et al., 1994). However, this effect was not replicated in Study 2, and further investigation would be required to determine the impact of experienced regret on attention.

The fourth hypothesis predicted that anticipated regret would increase number and specificity of goal relevant intentions for goals in the same, but not different domains as the situation that elicited anticipated regret. This hypothesis was only assessed in Study 1, which included an anticipated regret condition as a comparison (anticipated regret was not included in other studies because the focus of the present investigation was experienced regret). This hypothesis was not supported. Participants did not generate more goal-relevant intentions when anticipating regret, compared to either experienced regret or a neutral state, for goals within the same (or different) domain as the source of anticipated regret. This is inconsistent with previous research suggesting that anticipated regret improves goal pursuit in the same domain (e.g., Abraham & Sheeran, 2003, 2004).

The fifth hypothesis was that experienced regret would predict progress toward achieving future goals unrelated to the situation that elicited regret, and that this

relationship would be mediated by increased goal-relevant intentions and motivations. This hypothesis was not supported by Study 3.

In addition, results of analyses on other potential moderators revealed that trait regret, trait hope, and type of regret (action versus inaction) may change the relationship between experienced regret and goal pursuit. However, the effect of these factors on the relationship between experienced regret and goal-relevant intentions and motivations was not consistent within studies (i.e., did not moderate the relationship for all goal-relevant intention and motivations), nor was it consistent for the same goal-relevant intention or motivation across studies. As a result, the role of these moderators is not particularly informative to the present investigation, and no clear inferences can be made about their relevance of these for future research on the impact of experienced regret and goal pursuit.

Regret and Goal Pursuit

Overall, the hypotheses were not supported in this investigation, suggesting that, at least in this situation, experienced regret did not impact goal pursuit. Although null findings cannot be clearly interpreted, the findings in the present investigation might suggest that, in fact, experienced regret has no impact on pursuit of important goals.

Functional theories have typically been applied to emotions that occur early in development because these are believed to have a biological basis that underlies the changes in cognition, behavior, and physiology. For example, anger is thought to be an adaptation that helps motivate people to overcome obstacles to goals, and consequently achieve success. It is quite possible that functional theories are limited to such emotions

that occur early in development, and that they cannot be applied to emotions that develop later in life and have a cognitive basis. However, research on counterfacutal mind-sets (which involve changes in cognition that affect behavior in other domains) suggests that a functional perspective should also be applicable to emotions with a cognitive basis, such as regret (for a review of counterfactual mind-sets, see Wong et al., 2009). Further, activation of counterfactual mind-sets have been associated with intentions for goal pursuit (e.g., Epstude & Roese, 2011). Thus, there are both theoretical and empirical reasons to expect that experienced regret should have some impact on goal pursuit.

Another possible explanation for the (lack of) current findings could be that experienced regret only impacts repeated decisions in a particular domain. The majority of research on experienced regret has focused on such decisions, and has indicated that regret changes future decisions, such that people use past regrets to inform current and future similar decisions (e.g., Coricelli et al., 2007; Zeelenberg & Beattie, 1997; Zeelenberg & Pieters, 1999, 2007; Zeelenberg et al., 2008). For example, people may use past regrets about a negative service provider to determine whether or not to switch to a new provider (Inman & Zeelenberg, 2002; Zeelenberg & Pieters, 1999). Additionally, they might mentally undo their regretted events, thus simulating alternative routes to a decision the next time it occurs (Zeelenberg & Pieters, 2007). This may still be relevant to goal pursuit if people experience regret over decisions relevant to a goal, and consequently take action to make a better decision the next time it occurs.

There are reasons to be cautious about interpreting the null findings as reflective of no relationship. Anticipated regret has consistently been linked to decisions and goal-related processes in previous investigations (e.g., Abraham & Sheeran, 2003, 2004; Janis & Mann, 1977; Keinan & Kivetz, 2008; Reb, 2008), but did not predict goal pursuits in the present investigation. Similarly, counterfactuals have been associated with broad changes in cognition and improvements in goal pursuit (e.g., Epstude & Roese, 2010), and experienced regret is associated with counterfactual thought. The (lack of) findings in the present investigation, which contradict this previous research, suggests that there might be methodological considerations that limited the present investigation from identifying relationships.

Limitations and Future Directions

Although the current investigation was intended to provide valuable insight into the impact of regret on goal pursuit, there were several limitations that could have affected the ability to detect relationships in this investigation. First, as mentioned previously, it is possible that there are aspects of the study design that limited its effectiveness, such as the open-ended nature of the goal task that required coding to identify goal-relevant variables. It is also possible that thinking about how to achieve a goal may have activated a low-level conceptualization of the task regardless of emotion condition. This low level focus, in turn, may have implications for goal-relevant intentions independent of regret elicitations.

Second, the coding for goal-relevant intentions across studies requires further development. In Studies 1 and 3, several of the reliability coefficients were low,

indicating the need for future refinement of the coding scheme. In the future, in addition to clarifying coding instructions for independent coders and implementing standardized training, these descriptions could be coded for the following: 1) specificity within each intention, 2) type of specificity (i.e., number of what, when, where, or how), 3) the number of each type of specific intention generated, 4) the specificity of goals and intentions relative to those goals, 5) promotion versus prevention focus, and 6) construal level.

Third, participants were permitted to self-select their goals for this study and the goals varied across domains and among individuals. This resulted in unequal cell sizes and limited certain analyses. Further, it might have resulted in differences in the types of goals and intentions participants generated. Future investigations should examine the impact of experienced regret on goals and goal intentions using more controlled methods. For example, studies could elicit experienced regret and provide participants with a goal (such as succeeding in a task that is either in a same or different domain). Participants could then be provided opportunities to indicate their likelihood of engaging in various intentions for goal pursuit or to partake in actual goal pursuit, the achievement of which could later be assessed.

Fourth, participants may not have been invested in the tasks. In Studies 1 and 2, participants were recruited at the end of a semester from an undergraduate subject pool. These participants tend to be qualitatively different from participants recruited at other points during a semester (e.g., Aviv, Zelenski, Rallo, & Larsen, 2002), which may have had implications for performance on study tasks. Although Study 3 should have

addressed this issue by recruiting participants from a national sample, there is reason to believe that these participants may not have been particularly motivated to take the study seriously either. For example, although all participants were instructed to describe in detail an experienced regret, many of them failed to do so – either choosing not to write about regret at all, or to only briefly mention a regretted experience. Indeed, this is a limitation with narrative elicitations in general, as participants must be willing to engage in recollection in order for them to be effective (Lench et al., 2011). Future studies should better control for such issues of participant motivation.

CONCLUSIONS

Experienced regret did not alter focus of attention or increase the formation of goal-relevant intentions and motivations. Future investigations should address limitations in coding of goal-relevant intentions, as well as assess goal pursuit and achievement under more controlled conditions.

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APPENDIX

Narratives (Study 1 only)

Anticipated Regret Prompt (task 1 only): Please take the next **10 minutes** to think of and describe a future choice you will make and the **regret** you would feel if it another choice would have been better. Try to think of an experience of intense regret and immerse yourself as much as possible in the feelings you would have at that moment. Picture going through the event step by step, then describe what would happen as vividly as possible with all the important details. Note: although your responses are confidential, we ask that you do not provide any information that would be incriminating to yourself or others.

Experienced Regret Prompt: Please take the next **10 minutes** to remember and describe a choice you made and the **regret** you felt when you found out another choice would have been better. Try to remember an experience of intense regret and immerse yourself as much as possible in the feelings you had at the moment. Picture going through the event step by step, then describe what happened as vividly as possible with all the important details. Note: although your responses are confidential, we ask that you do not provide any information that would be incriminating to yourself or others.

Control Prompt: Please take the next **10 minutes** to remember and then describe the last time you went grocery shopping. Picture yourself going to the store, then describe what happened as vividly as possible with all the important details.

New Year's narrative (Study 3 only)

New Year's Regret Prompt: Please take the next **10 minutes** to remember and describe a choice you made last night that you now regret. Picture going through the event step by step, then describe what happened as vividly as possible with all the important details. Note: although your responses are confidential, we ask that you do not provide any information that would be incriminating to yourself or others.

Regret at time of event (Study 1 and Study 3): on a 9 point scale where 1=none at all and 9=extremely intense regret

Please rate how much regret you believe you will feel if the choice you described turns out to be worse than another choice?

Please rate how much regret you felt when you realized the choice you described turned out worse than another choice would have.

How much regret did you (or do you) feel over last year's resolution?

How much regret do you predict you will feel if you do not stick to this year's resolution?

Hypothetical Scenarios (Study 2 only; adapted from Zeelenberg et al., 1998)
Regret: Imagine that you are registering for a club, and are choosing between three different options, A, B, and C, headed by three different club leaders. You have heard that clubs differ widely in how interesting they are and the convenience of their meeting times. After some deliberation and discussion with other students, you decide to participate in club B. Club B turns out to be a disaster, with dull monotonous activities and inconvenient meeting times. Later you find out that section C was okay, with fairly interesting activities and reasonable meeting times, and that section A was terrific, with wonderful activities and very convenient meeting times.
Control: Imagine that you are registering for a club, has and are choosing between three different options, A, B, and C, headed by three different club leaders. After some deliberation you decide to participate in club B.

Regret of person in scenario (Study 2 only): on a 9 point scale where 1=not at all and 9=extremely
Please rate how much regret you would feel if you were the person in the above scenario, and you chose the worst club.

Emotion Ratings: on a 9 point scale where 1=not at all and 9=extremely
How optimistic are you?
How happy are you feeling right now?
How sad are you feeling right now?
How angry are you feeling right now?
How anxious are you feeling right now?
How satisfied are you feeling right now?
How proud are you feeling right now?
How much regret are you feeling right now?
How disappointed are you feeling right now?
How shameful are you feeling right now?
How guilty are you feeling right now?

Goal Questions:
Please think of a goal that is important to you and write it in the space provided.
Please think of a social goal that is important to you and write it in the space provided.
Please think of a health goal that is important to you and write it in the space provided.
How do you plan to achieve this goal? Please explain in the space provided.
What is your New Year's Resolution? Please write in the space provided
How do you plan to achieve your Resolution? Please explain in the space provided.

Intention Questions: first two questions rated on a 7 point scale (1=not at all, 7=extremely)
How important do you consider this goal (your resolution) to be?
How motivated are you to achieve this goal (your resolution)?
How much time do you intend to devote to achieving this goal (your resolution) over the next month? (rated in 10, 10 hour intervals from 0-10 to 91-100)

Goal Progress:
Please rate how successful you have been with your resolution. Rate on a 5 point scale from 1(*not at all successful*) to 7 (*extremely successful*).
Have you kept your resolution? (yes, somewhat, no)

Suspicion Checks:
What do you think this study was about?
Why do you think you wrote about an experience where you anticipated/experienced regret?
Why do you think you wrote about your last trip to the grocery store?
Why do you think you read the scenario about clubs?
Why do you think you were asked about the shapes?
Why do you think you were asked about an important goal?
Why do you think you were asked about your resolution?
Do you believe the regret/grocery narrative was related to the shape task?
Do you believe the regret/grocery narrative was related to the questions about your goal?
Do you believe the scenario was related to the shape task?
Do you believe the scenario was related to the question about your goal?
Do you believe the regret narrative was related to the questions about your resolution?